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ABSTRACT

Not only do computers offer rich motivational appeal with students, but they also boost speech communication professors' credibility. Research indicates that the use of multimedia leads to enhanced learning on criteria such as acquisition of content, development of skills, efficiency, learning, and satisfaction with instruction. Multimedia technology provides educators with hardware and software that permits combined use of text, graphics, animation, and sound. Computer assisted learning is an approach used to create a variety of interactive learning media in conjunction with a computer system. It is difficult to doubt the impact multimedia has had on public school instruction and the impact it is now having in the universities. Computer media improves student understanding, brings immediacy to the classroom, and improves the perception of instructor competence as viewed by both the students and the professor. To maintain a competitive edge and to provide a more stimulating learning environment, educators must find ways to overcome their initial resistance to computer-mediated communication, programs must be designed and implemented to integrate computer-based methods and communication skills into the entire speech curriculum. A combination of the essential elements of quality teaching and technology is possible. Technology is revolutionizing the world, and it is time for educators to revolutionize their classrooms. (Contains 30 references.) (RS)

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Computers: The Unrealized Motivational and Credibility Factors for Speech Communication Educators

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Abstract

Computer technology is altering teaching and learning. Its impact is felt from kindergarten through graduate school. Not only do computers offer rich motivational appeal with students today, but they also boost professorial credibility. Several multimedia concepts are introduced and a recommendation for teacher training concludes the paper.

Computers: The Unrealized Motivational and Credibility Factors for Speech Communication Educators

Toddlers arrange an array of boxes, buckets, and stools in order to reach the cookie jar. Teenagers spend countless hours of quality time with their parents, just "cruising," in order to obtain a driver's license -- with the goal of avoiding parental quality time. Doctorate candidates re-write countless proposals. It is amazing what one is willing to suffer in the name of lear ning when one is truly motivated to learn. McKeachie (1986) points out that "students will learn what they want to learn and will have great difficulty in learning material in which they're not interested...but the sorts of learning for which students are motivated is not always that which contributes to attaining the goals of our courses" (p. 221). It is apparent then, that our students are capable of learning <u>if</u> they are motivated. It is the purpose of this paper to explore the rapidly expanding arena of multimedia assisted instruction. The

contention is, that not only do computers offers rich motivation appeal with students today but they also boost professorial credibility. A recommendation for teacher training will conclude the paper.

Motivational Appeal

Numerous studies from various quarters have been conducted regarding student motivation factors. Aristotle defined communication rhetoric as logos, ethos and pathos. Maslow presents his hierarchy, Bloom his taxonomy, Dale his cone of experience, and Hawthorne his "effect." Surely every communication instructor reviews the communication process of sender-message-receiver. There are probably as many theories of motivation as there are books on education.

What more is there, then, that we can do to motivate our students? How do we put these theories into effect? Unfortunately, too many of us are content to construct our lectures and expect the student to be a willing vessel. Bonwell and Eison (1991) suggest that in addition to lecture, the professor might vary the structure of the course by offering

demonstrations, discussions, cooperative learning, debates, drama, role playing, simulations, games, peer teaching, computer-based instruction, and a modified lecture where the instructor pauses and asks questions for enhanced retention and comprehension. Some professors have augmented their courses with readings, field trips, exhibits, films, and videos. Still, the overhead projector is found to be the popular electronic medium used in the classroom today. Technology is left to research labs in the "hard" disciplines of math, science, and electronics. Unfortunately, the student can receive more stimulation on a home PC than in the "soft" courses of English, art, communication, and social studies (Willis, 1992). It is amazing that these courses are so slow to embrace computer visuals, when one realizes how interwoven visual images, visual teaching, and visual learning are to the very core of these subjects.

It has been found that "audio-visual technology arrests attention, arouses interests of the students and brings vicarious experience into the classrooms.

When creatively and appropriately used the audio-visual dynamics prolongs retention of learning. We learn through the sensory (sic) of seeing about 80% and hearing, about 12%" (Yam, 1986, p. 46). Additional findings were reported by Falk and Carlson (1991). Their research indicates that the use of multimedia leads to enhanced learning on criteria such as acquisition of content, development of skills, efficiency of learning, and satisfaction with instruction.

How often have we heard the lament, "Oh, if kids were only as motivated in school as they are in playing Nintendo." Soloway (1991) suggests we use this interest to motivate further self-expression, ownership of ideas and communication. If a student is not motivated, learning does not take place. Technology can facilitate those intrinsic motivators.

Computer Technology

Multimedia technology for today's educators provides hardware and software that permits combined use of text, graphics, animation, and sound. Open any

technological journal or computer magazine and read ads like these:

- Big impact. Minuscule price. That's our astonishing true-color LCD Panel. Use it to project from almost any computer and your lessons will blow away MTV!! -- InFocus Systems
- Jostens Learning Brings High Performance To Your Classroom. -- Jostens Learning
- In every teacher's life there's something that's transformed them professionally...for me, it's been the Mac -- Macintosh

What is multimedia? Smith (1992) defines computer-mediated communication as "communication among individuals facilitated by computer hardware, software, and a hardwire or telecommunications link" (p. 5). In today's technology jargon, multimedia

> is the combination of sound, motion and still pictures, and text on one display device, particularly a personal computer....The information is not just the pretty pictures and sounds, but also the text and quiz questions and

> graphics. And, the majority of the information is accessed in the sequence chosen by the user, not the linear presentation of the traditional videotape or film. (Whitaker, 1992, p. 27)

The slogan "You've come a long way, Baby," certainly applies to educational technology. Brittain (1992) reminds us that fifteen years ago educational technology consisted of mainframe computers in the district office; typewriters in business-education labs; and movie, slide and filmstrip projectors in the media center that teachers could check out for use in the classroom. Now we have advanced bibliographical systems that put library CD-ROM research into the home, dorm, or classroom via a modem.

Additional computer resources include computer supported testing programs which allow instructors to create tests from a supplied text bank and/or supply some questions of their own. Of interest to communication teachers is a design that provides a series of comments appropriate to each different type of speech. Additionally, every comment is cross-

referenced to pages in the text and outside readings (Berube, 1988).

Computer Assisted Learning is an approach used to create a variety of interactive learning media in conjunction with a computer system. This technique claims the benefit of being learner-controlled and highly motivating (Barker, 1989). The system can be set in large classes allowing immediate two-way communication between the students and the lecturer. A laboratory setting allows students to study at their own pace and review materials until they are mastered.

One relatively new computer technology, virtual reality, has been creating excitement around the world. "It provides for repeatable and controllable training, engaging the trainee and encouraging participation" (Meyer and Dunn-Roberts, 1992, p. 176). It can stimulate imagination and provide intellectual challenge in a manner that is non-threatening.

Trotter (1992) reports that many corporations are training their employees with multimedia and that "multimedia kiosks at shopping malls might soon

dispense government services" (p.20). As media presentations reach increasing levels of sophistication in business and research, so will the levels of demand for those presentations increase in fields as diverse as communication and mathematical science. If the world is using new forms of presentation, the university should also be using them.

Credibility

Speech Communication professors stress the importance of speaker credibility. Lucas (1995) indicates that "a speaker's credibility is affected by two factors: competence--how an audience regards a speaker's intelligence and knowledge of the subject [and] Character--how an audience regards a speaker's sincerity, trustworthiness, and concern for the well-being of the audience" (p. 369). DeVito (1990) expands the notion of competence by pointing out that there is often a halo effect when listeners generalize their perception of competence by extending credibility from one area to other areas. It is time to practice what we preach. Students are surrounded by computer

technology. Professors limiting themselves to the "horse and buggy days" of the overhead projector project more than the transparency. The instructors' competence and character are both questioned. If they are not current in presentation methods, are they current in the field? Are they concerned that the students receive the most correct and up-to-date information? Students may determine whether or not the course has any value based on how competent they perceive the professor to be.

The impetus for technological competence comes not only from business and research institutions, but from the students themselves. In many cases, we teach students who are considerably more adept with computer skills than we are. They have worked with computers, seemingly, from infancy. The underpinnings of higher education, the public schools, often outdistance the university regarding computer use.

> Students in more than 12,000 schools across America are blazing a trail for coming generations by exploring the vast potential of online

> information services. Clearly, America's schools and libraries are the proving ground for this new generation of information movement and processing. And students more often than teachers are pushing the envelope...It is the "how" of this online information service that tends to mystify adults, although children grasp it immediately...Myriad items are found on the daily menu, including: U.S....international...business...and financial news; editorials and other opinions from major newspapers and news services across America... [and] lifestyles. (Online Information Services, 1992 p. 58)

The "how" of computer technology is sweeping public schools across the country. This is what the high school student has experienced prior to coming to our classroom:

- Science 2000!, the first technology-based program adopted by the California State Board of Education, is an engaging, yet comprehensive, multimedia series that includes "model lesson

plans, simulations, investigations, hands-on experiments and manipulatives, films and videos, field trips and guest speakers, information on scientific careers and available databases, glossaries of related terms, and performance-based assessments that are open-ended (Kneedler, 1993, p. 73). All this information is placed in a computer and videodisc player and accessed immediately.

■ Two students at Andrew High School in Tinley Park, IL, worked together on a video term paper about Martin Luther King using CEL Educational Resources' The Video Encyclopedia of the 20th Century... and juxtaposed scenes from a Ku Klux Klan march with the civil rights leader giving a speech on non-violence. (Greenfield, 1993, p.10)

■ Utah's Granite School District offers a course in multimedia. A commercial for the class ran this message: "You want skills, you want excitement, you want to soar--to be transported.

> You want creativity, you want it all: sound, motion, animation, and the ability to make it all work together. You want it operational, even cultural, and to say all the right things at the right time. (Shaw, 1993, p. 87)

■ In Texas, The Panhandle-South Plains Center consortium's mission is to integrate technology into public teacher education and training, and more than 60 school districts in the region are involved with the collaboration. Brian Lotven, dean of West Texas State University A & M's College of Education and Social Sciences, commented, "the applications are endless...in virtually any mode of teaching, this can play a part" (Walton, 1993, p. B 4).

It is difficult to doubt the impact multimedia has had on public school instruction and the impact it is now having in the universities. Lotven is correct; virtually any teacher can take part. The impact goes beyond influencing learning and teaching styles. Students view the professor who is comfortable with

technology as more competent and the instructor experiences positive intrinsic rewards relevant to the interpersonal and affective domains. The instructor feels more competent and effective. Consultant Saul Rockman, who evaluated the Indiana Department of Education's "A Computer for Every Teacher" program explained how Indiana teachers grew professionally: "Teachers and administrators universally reported a better sense of professional competence as a result of mastering the computer...they see themselves as more professional in the eyes of their students" (Bracy, 1993, p. 9). Computer media improves student understanding, brings immediacy to the classroom, and improves the perception of instructor competence as viewed by both the student and the professor. In spite of these impressive findings, professors will still be reticent in embracing a multimedia classroom.

Recommendation for Teacher Training

People tend to resist change. Teachers of higher education are predictably rigid. However, Pang (1982) concluded in her research that "the main drive behind a

lecturer using or not using instructional media...is conditioned by his knowledge of using the media" (Yam, 1986, p. 46). Professors need training in the use of instructional media. They need to understand the software as curriculum, the way they understand textbooks.

In fact, some educators are using computer software to create their own texts. Ed Green, a professor of education at Brigham Young University in Provo, Utah, has developed a "school of the future" where teachers--not book publishers-create and control the teaching materials. He has created a systematic integration of videotape, newsprint "text booklets," and computer disks. "We're going to show people how stimulating school can be--any school, rich or poor... I am offended by $60 textbooks. I'm going to make $1 texts and $2 disks that the rich schools will want and the poor schools can get" (Amiga Helps Education Professor Turn Dreams into Reality, 1993, p. 40). An instructor interested in constructing a programmed text might look to Green's "school of the future" or to

other reports about publishing online journals such as "Teaching Faculty to use Networked Information Resources," a cooperative effort offered by the University of California at San Francisco, the publishing firm Springer-Verlag, and AT&T Laboratories.

We teach as we were taught. Our challenge is to incorporate new instructional tools. Falk and Carlson (1992) remind us that

> Multimedia is a powerful teaching and learning tool. Hardware is becoming cheaper and more powerful, and the quantity and quality of applications almost grows daily. Unfortunately, until teachers are taught with this tool and have models for effective instructional design and use, the full potential of this technology will likely go unrealized (p. 96). . . Everyone can participate in realizing this potential. Those who know more about multimedia and its use can share this information with others; those who know relatively less can seek opportunities to expand their knowledge. Teachers at all levels of

> education can appropriately incorporate multimedia. (p. 100)

Teaching practices change, and are strengthened, as teachers use technology. According to the researchers at the Bank Street College of Education,

> teachers with computers expect more from their students, spend more time with individual students, and are more comfortable with students working independently or in small groups, and spend less time lecturing and teaching to the whole class. They are more willing to take risks with their students and have come to see themselves more as coaches and facilitators. (Bracey, 1993, p. 8)

However, it takes time to integrate innovative instructional tools. Moreover, it is likely that computers are available but are not being used. Elliot (1992) warns, "If your teachers aren't using the old machines well, they probably won't use the new ones effectively either. A chunk of your technology budget might be better spent on teacher training. After

you've held a good series of introductory and refresher workshops, your existing computers might take on a fresh shine" (p. 42). Educators need to take advantage of on-site computer resource centers, convention and conference seminars, community college extension courses, commercially sponsored courses, colleagues, and good old-fashioned hacking, until they are comfortable enough to teach with a computer notebook and projection panel or in a fully equipped multimedia classroom. Furthermore, training must be a continuous process if faculty and students are to keep ahead of the technology.

Ruth Hoffman (1983), in her text, Micro-Computers and Teachers, gives some practical advice to the novice user and outlines the following benefits to educators:

- You do not have to be a mathematician or computer scientist to use a home computer. Everyone can learn.
- You should learn it now, while hundreds of thousands of others are also in the learning process.

- You can keep up with the rapidly advancing technology if you start with the basics and absorb each new development as it comes.
- You will find the computer an excellent supplementary aid, providing you with an additional presentation mode. (p. 1)

She goes on to list the benefits to students:

- Students show increased motivation to learn, to do assignments, and to explore and create.
- The computer is a powerful individualization tool.
- Computer usage in school enables students to prepare for life and for careers.
- Computer graphics provide students with increased visual representation of concepts and ideas.
- Simulations and other interactive modes allow students to have an active role in learning.
- Students are stimulated to analyze and explore the world beyond the classroom. (p.2)

Many institutions provide technology training for their faculty. The focus of Amarillo College's professional development computer center is to train faculty to integrate technology into curriculum. The focus is on implementing advanced technology applications for the classroom and the workplace, building measurable competencies and outcomes assessment into the curriculum, and tracking student progress and problems early and effectively.

In order to maintain a competitive edge and to provide a more stimulating learning environment, educators must find ways to overcome initial resistance to computer-mediated communication. Programs must be designed and implemented to integrate computer-based methods and communication skills into the entire speech curriculum.

Conclusion

The use of visuals, video tapes, films, and computer media capture students' attention, stimulate their motivation, and assist in student learning. They are particularly beneficial supplements to lectures and

discussions, especially when explanatory information is given before, and after, using these instructional media.

Instructional media is well established. Distance learning, tele-home-education programs, computer-video interactive learning programs, and computer assisted instruction will change the face of traditional teaching. Bowers (1992) points out that

> one of the justifications for expanding the use of computers in the educational process is that we are entering the "Information Age," and thus must be competent in the use of this technology if we are to be functional citizens in the next century. The "Information Age" is a powerful metaphor that, like all metaphors, illuminates and hides at the same time...computer mediated knowledge does not encode the moral guidelines that have traditionally been part of cultures which have evolved ways of living in sustainable relationships with their environments. (p. 27)

It is apparent that while computers will change the face of traditional teaching, the importance of the teacher's presence is not diminished. No matter which program an instructor, or institution, selects to employ, interpersonal communication will continue to be a central factor in teaching. Multimedia provides an additional method of relating to students. The technology brings change and initial uneasiness; however, intrapersonal apprehension lessens with experience and allows expanded possibilities for interpersonal connections between instructors and students.

It is the contention of this paper that a combination of the essential elements of quality teaching and technology is possible. Creative and intelligent use of technology will mesh teaching styles with student learning styles. "Educators, researchers and students need tools that let them study, learn, teach and reach in natural ways. They need cost-effective tools that enable them to exploit an ever-increasing universe of resources. And they need tools

that will grow along with them, not be outgrown by them" (Tyre, 1992, p.11). We must better use technology in the curriculum. Shaw (1993) indicates that the bottom line of multimedia use is that it "is designed to increase the instructional skills imparted by the school. This is the product of our profession . . . The destinations we are reaching with these technology applications are unreachable any other way" (p. 87).

The greater use of technology also requires greater assessment. We need to see a clear link between new technology and measurable educational goals. Student achievement is most often measured by scores on standardized tests. As noted by Wilder & Fowles (1992) data does not currently recognize that such demands take little account of the actual conditions that mark the implementation of technology in schools. These include the fact that implementation is a process that proceeds over a period of several years; that computers are used in a wide variety of ways by teachers and schools and for a range of

purposes; and that the widespread use of instructional computing is too new to have been supported by a systematic body of research about what does and does not work. (p. 82)

Innovation must precede assessment. As stated in a 1992 survey report, "Education and New Information Technologies,"

> The potential of the new information and communication technologies for improving learning and teaching will not be realized unless teachers are well trained and retrained in their pedagogical use. Familiarization with the technologies is not sufficient; the real challenge is the training of teachers in the use of...technologies for non-trivial applications, such as simulations and model building, problem solving, complex microworlds, or exploration and discovery, and even judicious uses of basic software packages such as word processing, spreadsheets and databases. (Charp, 1993, p. 6)

Ferrante, Hayman, Carlson, & Phillips (1988) declare "the computer is the most important invention of the 20th century and one of the central inventions in human history" (p. 77). The possibilities for multimedia use as a teaching tool seem limitless. It is a motivational factor for both the instructor's teaching style as well as the student's learning style. The use of technology impacts the student's perception of the instructor's competence. Technology is becoming an ever-increasing component of our daily lives and educators must learn to use it effectively. Technology is revolutionizing our world. It is time for us to revolutionize our classrooms.

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